

# OPTIONAL DETERMINATION OF NON-SIGNIFICANCE (DNS) NOTICE MATERIALS

The attached materials are being sent to you pursuant to the requirements for the Optional DNS Process (WAC 197-11-355). A DNS on the attached proposal is likely. This may be the only opportunity to comment on environmental impacts of the proposal. Mitigation measures from standard codes will apply. Project review may require mitigation regardless of whether an EIS is prepared. A copy of the subsequent threshold determination for this proposal may be obtained upon request.

File No. 20-112821-LB, 20-112843-LD

Project Name/Address: Michael's Subaru

15000 SE Eastgate Way

Planner: Mark C. Brennan

Phone Number: (425) 452-2973

Minimum Comment Period: 14 days

Materials included in this Notice:

Blue Bulletin
Checklist
Vicinity Map
Plans
Other:



# SEPA Environmental Checklist

The City of Bellevue uses this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

## Instructions

The checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully and to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions.

You may respond with "Not Applicable" or "Does Not Apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies and reports. Please make complete and accurate answers to these questions to the best of your ability in order to avoid delays. For assistance, see <u>SEPA Checklist Guidance</u> on the Washington State Department of Ecology website.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The city may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Back	kground , , , , , , , , , , , , , , , , , , ,
1.	Name of proposed project, if applicable MICHAEL'S TUBARLI
2.	Name of applicant LANCE MUELLER & ASSOCIATES / ARCHITECTS
3.	Contact person LANCE MUELIER Phone 206 325 7553
4.	Contact person address 130 LAKESITE AVE, SUITE 250, SCATTLE WA
5.	Date this checklist was prepared August 3 <sup>no</sup> 2020
6.	Agency requesting the checklist BELLEVIE

7. Proposed timing or schedule (including phasing, if applicable)  $\sqrt{\phantom{a}}$ 

START CONSTRUCTION IN SPENG/SUMMER 2021 OCCUPY SUMMER 2022

8. Do you have any plans for future additions, expansion or further activity related to or connected with this proposal? If yes, explain.

NO

- 9. List any environmental information you know about that has been prepared or will be prepared, that is directly related to this proposal.
  - 1. GESTECHNICAL INVESTIGATION & REPORT
  - 2. CRITICAL AMEAS STUDY MAY BE REQUIRED DUT TO STEET SLOPES ON OR NEAR SITE.
  - 3. TRANSPORTATION /TRAFFIC STUDY INCLUDING T.I.A.
- 10. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

NO

11. List any government approvals or permits that will be needed for your proposal, if known.  $\checkmark$ 

CITY OF BELLEVUE PERMITS: LB-CANDITANAL USE, LD-DESGN REVIEW,

LO-CRITICAL ADERS, GD-ELEANING & GRADING, UE-VILLITY EXTENTIAN,

BB-BUILDING US DEXXO, MECHANICAE, PLYMBINZ, ELEZTRIZAL.

FIRE PERMITS- ALARM, SPRINIZIERS,

RIGHT & WALL PERMITS. OCCUPANCY PERMIT

12. Give a brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

DEMO & REMOVE & EXISTING BUILDINGS (VIN AND SUBARU AUTO SAVES & SERVICE BLOGG). CLEAR & GRADE AS READ TO LANSTMOT NEW SINCLE STORY SUBARU AUTO SALES & SERVICE PACILITY OF APPROX. 70,000 S.F. UNDER ROOF. NEW ASPHALT PAVING WHERE REGIONED. NEW LAND SUAP-ING. NEW PLANTING STRIP & SIDEWALK ON SE. EASTGATE WAY.

SITE AREX 15 279,052 S.F OR U.41 AC.

13. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and the section, township and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. 

\[
\square\$

THE SITE ADDRESS IS 15000-15150 SE EASTGATE WAY

## **Environmental Elements**

#### Earth

เท		
1.	General description of the site:	
	☐ Flat	
	☐ Rolling	
	☐ Hilly	Site slopes from approx. elevation of
	Steep Slopes AT UMITED AREAS,	387' at northeast corner to approx. elevation 338' at southeast corner
	☐ Mountainous	
	Other LOW SLOPE DOWN FROM NORTH	+ TO Sound
2.	What is the steepest slope on the site (approximate	percent slope)?
	30% to 50%	

3.	What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.
	SANDY, GRAVELY SOILS WITH SOME FINES.
4.	Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. ${m J}$
	Refer to page 3 of the Geo-technical report regarding
5.	on-site soil preparation if used as structural fill.  Describe the purpose, type, total area and approximate quantities and total affected area of any filling, excavation and grading proposed. Indicate the source of the fill.
	THE EXISTING SITE IS ABOUT 91% IMPERUIOUS. WHEN EXISTING BUILDINGS XRE PEMOUED, SOME EXISTING PAVING WILL ALSO BE REMOVED FOR OUT AND FILL TO BACKNEE EXPRIMINARY AS MICH AS POSSIBLE. ASPHALT WILL BE REMOVED TO INSTALL NEW CAMOSCAPING. ESTIMATED CUT = 8.825C4, FILL=5.800C4 DEMO MATERIAL TO BE PECHOLED WHEN POSSIBLE.
6.	Could erosion occur as a result of clearing, construction or use? If so, generally describe. IT IS POSTIBLE SOME ENDSION COULD OCCUP. DUE TO HEAVY RAIN WHEN SITE HAS BEEN CLEARED IN CONSTRUCTION ANERS.
7.	About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
	Erosion control per Clearing and Grading inspection & BCC 23.76

8. Proposed measures to reduce or control erosion, or other impacts to the earth, if any.

EMPLOY ERDIAN CATINOL METHODS PEAVINED AND/OR
APPROVED BY THE CHY OF BELLEVIE. BLC 23.76.090

A CSWPPP IS REQUIRED FOR ALL CLEARING & GRADING PERMITS

Erosion control per Clearing and Grading inspection & BCC 23.76

Air

1. What types of emissions to the air would result from the proposal during construction, operation and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

DURING DEMOLITION & CONSTRUCTION JOINT DUST MAY BE CENTRATED.

THERE WILL BE EMPLOYEE AND EXHAUST & CONSTRUCTION EQUIPMENT

EXHAUST EMISSIONS.

DURING OCCUPANCY, ALLY VEHICLE EXHAUST PROM CUSTOMER &

DEALERSHIP VEHI.

Construction dust suppression measures per BCC 23.76

2. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.  $\checkmark$ 

NO

3. Proposed measures to reduce or control emissions or other impacts to air, if any.  $\checkmark$ 

DUPING DEMO & CONSTRUCTION, KEEP SOILS & DEBTO, S DAMP TO AVOID DUST DUPING DRY WEATHER. KANINTAIN CLEAN STREETS TO REMINE ANY TRACKED SOIL.

# Wate

100		100				30 AV		
1		C .	ırfa	ca 1	Λ	2	-01	-
- 1	7200	71	1111		vν		-	

er	
Su	rface Water
a.	Is there any surface water body on or in the immediate vicinity of the site (including
	year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe
	type and provide names. If appropriate, state what stream or river it flows into. $\checkmark$
	NO
h	Will the project require any work over, in or adjacent to (within 200 feet) the described
D.	waters? If yes, please describe and attach available plans.
	waters: If yes, please describe and attach available plans.
	NO
c.	Estimate the amount of fill and dredge material that would be placed in or removed
	from surface water or wetlands and indicate the area of the site that would be affected
	Indicate the source of the fill material. $\checkmark$
	N.A.
	14.7
d.	Will the proposal require surface water withdrawals or diversions? Give a general
	description, purpose and approximate quantities, if known. $\checkmark$
	HO
	40
_	Does the proposal lie within a 100-year floodplain?
e.	Does the proposal lie within a 100-year floodplain?

f.	Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. $\checkmark$
	NO
Gr	ound Water
	Will groundwater be withdrawn from a well for drinking water or other purposes? If so,
d.	give a general description of the well, proposed uses and approximate quantities
	withdrawn from the well. Will water be discharged to groundwater? Give general
	description, purpose, and approximate quantities if known. $\sqrt{}$
	description, purpose, and approximate quantities in known.
	No
b.	Describe waste material that will be discharged into the ground from septic tanks or
υ.	other sources, if any (for example: Domestic sewage; industrial, containing the
	following chemicals; agricultural; etc.). Describe the general size of the system, the
	number of such systems, the number of houses to be served (if applicable), or the
	number of animals or humans the system(s) are expected to serve. $\sqrt{}$
	NAME

2.

- 3. Water Runoff (including stormwater)
  - a. Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

STORM WATER IS CURRENTLY COLLECTED ON THE SITE BY A PREVIOUSLY APPROVED STORM WHITER SYSTEM. THE NEW PROVECT WILL REQUIRE MUCH OF THE CURPENT SYSTEM TO BE UPOPADED TO CURPAN CODE. STORM WATER WILL FLOW FROM THE STREETS).

NO			
7 9.7			

c. Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.  $\checkmark$ 

16	· · ·	 	
NO			

Indicate any proposed measures to reduce or control surface, ground and runoff water, and drainage pattern impacts, if any.

THE NEW PROSET WILL COMPLY WITH CORPORT CITY OF BELLEVIES STARM OF AND SERVENTS I-9 OF THE STORM AND SERVENCE WATER STANDARDS. AN UNDERGRAVED STORM VAULT WILL REQUIRED. PERVIOUS PROFEMENT WILL BE USED WHERE ALLOWED BY JOILS CANDITIONS & CODE PROVISIONS.

Per Utilities Code 24.06 Storm and Surface Water

Plant						
1.	Check the types of vegetation found on the site:					
	deciduous tree: alder, maple, aspen, other					
	■ evergreen tree: fir, cedar, pine, other					
	shrubs					
	□ grass					
	□ pasture					
	□ crop or grain					
	orchards, vineyards or other permanent crops					
	□ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other					
	□ water plants: water lily eelgrass, milfoil, other					
	□ other types of vegetation					
2	What kind and amount of vegetation will be removed or altered? $\checkmark$					
3.	List any threatened and endangered species known to be on or near the site.   Nate 144001					
4.	Proposed landscaping, use of native plants or other measures to preserve or enhance vegetation on the site, if any.  NEW LANDSCAPING WILL BUS REQUIRED AT PROPERTY PERIMETER AND IN PARKING AREAS. USE OF INDIGENUS DECIDIOS AND EXERCISED TREES & SHIWBS WILL IMPRING THE SITE					
	Per Utilities Code 24.06 Storm and Surface Water  Preliminary Landscape Plan is included in drawings submitted with the application.					

5.	List all noxious weeds and invasive species known to be on or near the site. $\checkmark$
	THENE MAY BE SOME IVY OR PLACE BEARY ON THE SITE.
Anim:	Site is within Pacific flyway, which encompasses the entire Puget Sound region.  List any birds and other animals which have been observed on or near the site or are
l-•	known to be on or near the site. Examples include:
	Birds: ☑hawk, ☐heron, ☐eagle, ☑songbirds, ☐other ☐ PLESHS, STARLINGS
	Mammals: ☐deer, ☐bear, ☐elk, ☐beaver, ☐other <u>SMAN POPERTS</u> , SAN IRPSUS
	Fish: ☐bass, ☐salmon, ☐trout, ☐herring, ☐shellfish, ☐other
2.	List any threatened and endangered species known to be on or near the site. $\checkmark$
	NONE 14bush
3.	Is the site part of a migration route? If so, explain.
	THE SHE IS WITHIN THE PACIFIC FLYWAY OF MICRATURY BIRDS.
	Site is within Pacific flyway, which encompasses the entire Puget Sound region.
4.	Proposed measures to preserve or enhance wildlife, if any. $\checkmark$
	·MAINTAIN EXISTING MATURE TREES & OTHER VEGETATION.  NEW LANDSCAPING WILL USE NATIVE PLANT MATERIALS TO GUITANNE WILDLIFE ENVIRONMENT:  PROVIDE STORM & SURFACE WATER SYSTEM THAT PESULTS IN RELATIVELY CLEAN WATER VEAVING THE STE.
	THE DIE WAVING THE SITE.

5.	List any inva	asive animal species known to be on or near the site. $\checkmark$	
	Nave	RNOWN.	

# **Energy and Natural Resources**

1. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

ELECTRIC ENERGY FOR POWER, LIZHTING, NATURAL GAS FOR HEATING

2. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.  $\checkmark$ 

NO

3. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any.  $\checkmark$ 

THE PROJECT MUST COMPLY WITH THE LUNGHINGTON STATE ENERGY CASE WHICH REQUIRES A WELL INSULATED BUILDING ENUGLASE, LOW ENGREY EXAMINING LIGHTING CLED), ENGREY EFFICIENT HUAC EQUIPMENT, DAYLIGHTING PROVISIONS FROM WINDOWS & THYLIGHTS WHEN APPROPRIATE. LOW WATER USE PLUMBING EIXTURES, REDYCE DEMODERATION.

## **Environmental Health**

1. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill or hazardous waste, that could occur as a result of this proposal? If so, describe.

NO

a. Describe any known or possible contamination at the site from present or past uses.  $\checkmark$ 

NAVE KNOWN

b. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

NONE KNOWN

c. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

SMAN AMOUNTS OF SOURTS, AND CLEANING MATERIAL NORMALLY ASSOCIATED WITH AUTO SERVICING WILL BE STURES & USED IN THE SHOP.

d. Describe special emergency services that might be required.  $\checkmark$ 

NONE BEYAND NORMAL POLIZE & FIRE DEPT SERVICES

e. Proposed measures to reduce or control environmental health hazards, if any.

COMPLY WITH STATE LAI SAPETY PRACTICES BURING CONSTRUCTION & USE OF COMPLETED PRACT.

Clear & Grade Code BCC 23.76

DOE chapters in WAC

## 2. Noise

a. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

NONE

b. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

SHOPET HERM - CONSTRUCTION EXCUPLINENT NOISE FROM TAM TO SIPM USEKDAY J

VONC TERM - ONLY NORMAL TRAFFIC TO AND FROM THE SITE.

Noise Control per BCC 9.18

c. Proposed measures to reduce or control noise impacts, if any.

NO JIGHTICANT NOISE IS GENERATED BY THIS PROPOSEL, SO NO SPECIAL MEASURES ARE NEEDED.

Conditions of Approval to use noise suppression techniques throughout construction.

## Land and Shoreline Uses

1. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.  $\checkmark$ 

THE WIRDENT USE IS A VW AUTO SAVES & SERVICE DEATERSHIP AND A SUBARU DEALERSHIP. TO THE WEST IS A TOYOTA DEALERSHIP PLUS SHOPS AND RESTAURANTS. A LARGE PARICING GARAGE IS TO THE WEST OF THE SITE. A MOTEL OFFICES AND RESTAURANTS ARE TO THE EAST. PROPERTY QUEIED BY THE MARMAN CHURCH IS TO THE NORTH. I. 90 IS TO THE SOUTH.

2. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to non-farm or non-forest use?

No.

a. Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling and harvesting? If so, how?  $\checkmark$ 

NO

3. Describe any structures on the site.  $\sqrt{\phantom{a}}$ 

THE 2 STORY VILL BUILDING IS 6,771 S.F. FOR SALES, PARTS of ADMIN.
THE 2 STORY FUBARU BUILDING IS 10,070 S.F FOR SALES, PARTS, ADMIN.
THERE ARE 2 ONE THORY SERVICE THATS, ONE 136,343 S.F., THE
OHER IS 6,512 S.F.
ALL ARE TO BE REMAYED.

Will any structures be demolished? If so, what? $\checkmark$
ALL THE EXISTING BUILDIPS STRUCTURES WILL BE DEMOLITHED
Community Business (CB)
What is the current zoning classification of the site? Commercial Business (CB)
What is the current comprehensive plan designation of the site?
If applicable, what is the current shoreline master program designation of the site? $\sqrt{}$
NA
Has any part of the site been classified as a critical area by the city or county? If so, specify. $\checkmark$
THERE IS A SMALL N.G.P.L. IN AN EATEMENT AT THE NW CORNER OF THE STE. NEW STRUCTURE WILL BE QUER 75' FROM SLOPES & SOILS ENGLIFER, FOUND BOILS STABLE AND NOT ORITIZAL AREAS.
Approximately how many people would reside or work in the completed project? 150 - 185 ±
Approximately how many people would the completed project displace? VERY FEW J
Proposed measures to avoid or reduce displacement impacts, if any. 🗸
PURE EXISTING EMPLOYEES AT OTHER DEALERSHIPS UNDER SAMONT OWNERSHIP WHEN POSSIBLE.
Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any.
THE PROJECT WILL BE ALLOWED IN THE ZONE WITH A
CONDITION USE BERMIT. PRE-APPLIANTION CONFEDENCE APPLICATION # 20-104779 DB

13.	. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any. $\checkmark$
	NA.
Housi	ng
1.	or low-income housing.
	NONE
2.	Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. ${f J}$
	NAVE
3.	Proposed measures to reduce or control housing impacts, if any. $\checkmark$
	NAVE
Aesth	
1.	What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? $\checkmark$
	TALLEST HEIGHT WILL BE ABOUT 16 TO 27 FT. EXTERIAR MATERIALS WILL BE ALUMINUM COMPACTE MATERIAL (ACM) & GLASS AT HOWRAM. HORIZONTAL PIBBED METAL PANELS & PAINTED CONC. AT SHOP WALLS.
2.	What views in the immediate vicinity would be altered or obstructed?
	NONE  The Land Use Code does not protect views.

2	Proposed measures to reduce or control aesthetic impacts, if any $\sqrt{}$	
J.	THE BUILDING DESIGN WILL HAVE . SOME CHANCE OF METERIALS & COLOR WITH SOME MODULATION. NEW LANDSZAPING ON THE SITE AND LAND THE SHE WALL WILL ADD COLOR, TEXTURE, THADE & THADOWS.	
Light	and Glare	
1.	What type of light or glare will the proposal produce? What time of day would it mainly	
	occur?	
	THERE WILL BE SOME GLARS FROM VEHICLE HEADY SHIT AT NIGHT.	
	EXTERIAR PARKING LOT LIGHTING WILL BE VISIBLE	
2.	Could light or glare from the finished project be a safety hazard or interfere with views?	
	ND LUC 20.20.522 Light & Glare	
3.	What existing off-site sources of light or glare may affect your proposal?   ✓	
	PAE	
4.	Proposed measures to reduce or control light and glare impacts, if any. $\checkmark$	
	AN EXTERIOR LIGHT FIXMES WILL HAVE GLAPE COT- OFF SHIBLDS BUILT / HTD THE FIXTURE	
Recre	ation	
1. What designated and informal recreational opportunities are in the immediate vicin		
	RESTAMPANTS, WALKING OR JOGGING.	
2.	3 10 10 10 10 10 10 10 10 10 10 10 10 10	

Annotated by (MCB) on 8-26-20

Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any. $\checkmark$		
NAVE		

#### **Historic and Cultural Preservation**

1. Are there any buildings, structures or sites located on or near the site that are over 45 years old listed in or eligible for listing in national, state or local preservation registers located on or near the site? If so, specifically describe.

HO

2. Are there any landmarks, features or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. 

✓

HONE KNOWN. NO SNOTES KHOWN.

3. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.  $\checkmark$ 

NONE AS SITE HAS BEEN DEVELOPED ! USED FOR AUTO SALES & SERVICE FOR MANY DECADES

4.	Proposed measures to avoid, minimize or compensate for loss, changes to and disturbance
	to resources. Please include plans for the above and any permits that may be required. $\checkmark$

NONE			

# Transportation

1. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

ACCESS IS BY THARED DRIVE FROM T.E. ENSTANTE WAY.
ON & OFF RAMP CONNECTIONS TO I.GO ARE ADVACENT TO THE
SITE.

2. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?  $\checkmark$ 

YES, METRO AT 143H AVE S.E. & S.E. EASTGATE WAY.
TRANSIT STOP & POSSIBLE SHELTER ARE REQUIRED TO BE
CONSIDERED BY GITY TRANSPORTATION DEFT.

3. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?  $\checkmark$ 

NO ADDITIONAL PARKING TRACES. THE PROPOSED PROJECT WOULD REDUCE EXISTING PARKING : AUTO STORAGE STALLS FROM ABOUT 725 TO ABOUT 430

4. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

YES. NEW BIKE LANE PWS NEW GFT WIDE PLANTING STRIP AND SIET STOEMALK WILL BE REQUIRED ALONG JE. CASTGATE WAY FRONTAGE. THE EXISTING PEDESTRIAN TRAIL PLANE THE EAST PROPERTY LINE WILL BE IMPEARED FOR PEDESTRIANS & BICHCES.

5.	Will the project or proposal use (or occur in the immediate vicinity of) water, rail or air transportation? If so, generally describe. $\checkmark$		
	No		
6.	How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?  IN PROJECT WIN CONERATE 1,353 TRIPS PER DAY. EXISTING IS 612 TRIPS PER DAY.  PAR PEAK HOUR TRIPS ARE ESTIMATED AT 115 TO 115 COMBINED IN \$ OUT TRIPS. EXISTING PM PEAK IDUR ARE 59 COMBINED.  ONE OR TWO COLINERY TWOCKS PER DAY. PARTS ARE DELIVERD AT NIGHT BASED AN GITY OF BELLENCE TRIP GENERATION RATES BY TENW		
7.	Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.		
8.	Proposed measures to reduce or control transportation impacts, if any. J  ENCOURAGE EMPLOYEES TO CAR POOL, PLIDE SHARE OR USE  TRANSIT WHEN POSSIBLE ? PRACTICAL.		

## **Public Service**

1. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

NO, JINCE PROPOSAL REPLACES A LIKE USE.

2. Proposed measures to reduce or control direct impacts on public services, if any.  $\checkmark$ 

NONE

#### **Utilities**

- 1. Check the utilities currently available at the site:  $\sqrt{\phantom{a}}$ 
  - Electricity
  - natural gas
  - **□** water
  - refuse service
  - **⊡**∕telephone
  - sanitary sewer
  - septic system
  - other
- 2. Describe the utilities that are proposed for the project, the utility providing the service and the general construction activities on the site or in the immediate vicinity which might be needed.  $\checkmark$

ALL REQUIRED UTILITIES EXIST ON SITE AND WILL BE MODIFIED. AS REQUIRED FOR NEW CONSTRUCTION.

# Signature $\sqrt{\phantom{a}}$

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature	gum m
Name of signee	LANCE MUELLER
Position and Agency/Organization	ANGHIECT, LAKE MWELLER & ASSE.
Date Submitted	8/11/2020
	1011



June 4, 2020

JN 20102

Michael's Automotive Group c/o Lance Mueller & Associates 130 Lakeside Avenue Southeast, #250 Seattle, Washington 98122

Attention: Lance Mueller

via email: <a href="mailto:lmueller.com">lmueller.com</a>

Subject: Transmittal Letter – Geotechnical Engineering Study

Proposed Michael's Subaru of Bellevue Facility

15150 Southeast Eastgate Way

Bellevue, Washington

## Greetings:

Attached to this transmittal letter is our geotechnical engineering report for the proposed Michael's Subaru of Bellevue Facility to be constructed in Bellevue, Washington. The scope of our services consisted of exploring site surface and subsurface conditions, and then developing this report to provide recommendations for general earthwork and design considerations for foundations, retaining walls, subsurface drainage, and temporary excavations. This work was authorized by your acceptance of our proposal, P-10556, dated February 21, 2020.

The attached report contains a discussion of the study and our recommendations. Please contact us if there are any questions regarding this report, or for further assistance during the design and construction phases of this project.

Respectfully submitted,

GEOTECH CONSULTANTS, INC.

D. Robert Ward, P.E.

Principal

cc: Toyota of Bellevue – Erik Paulson

via email: epaulson@toyotaofbellevue.com

DRW:kg

# GEOTECHNICAL ENGINEERING STUDY Proposed Subaru of Bellevue Facility 15150 Southeast Eastgate Way Bellevue, Washington

This report presents the findings and recommendations of our geotechnical engineering study for the site of the proposed Michael's Subaru of Bellevue facility.

We were provided with a site plan prepared by Lance Mueller and Associates that included topographic information. Based on this plan, we understand that three existing buildings located near the middle of the site will be removed and replaced with one large building. One existing building on the west-central portion of the site will remain. The new building will likely have a slab grade at about elevation 363 feet; this grade is near the existing site grade on the northern end of the building, but up to about 5 feet above the existing site grade on the southern side.

If the scope of the project changes from what we have described above, we should be provided with revised plans in order to determine if modifications to the recommendations and conclusions of this report are warranted.

## **SITE CONDITIONS**

#### **SURFACE**

The Vicinity Map, Plate 1, illustrates the general location of the site in the Eastgate area of Bellevue. The project site is located on the eastern portion of a large retail development that includes several buildings and a large amount of surface parking. The site is somewhat rectangular, measuring about 350 feet by 800 feet, with the east-west dimension being the smallest. Southeast Eastgate Way borders the southern end of the site.

Overall, the site slopes downward from north to south. The southern, approximate two-thirds of the site mostly flat with an average grade of only about 2 percent. However, there is a slope up to about 10 to 12 feet tall that is inclined about 20 to 25 percent on the eastern edge of the northern end of this southern portion; it is apparent to us per our observations and soils borings (discussed in the subsequent section of this study) that this slope was mostly created be grading done for the existing development. The flatter area of the southern portion of the site contains four buildings and a significant amount of paved areas (surface parking and driveways). The northwesternmost building will remain as part of new facility. There is a newer parking lot on the upslope, northern side of the site that is about 10 to 15 feet higher than the large portion of the site. A steep slope that includes some rockeries separates the newer parking lot from the large portion. Another slope/rockery border the northern edges of the newer parking lot.

## **SUBSURFACE**

The subsurface conditions were explored by drilling six test borings at the approximate locations shown on the Site Exploration Plan, Plate 2. Our firm had also observed the drilling of a test boring on the northwestern portion of the site in 2005. Our recent exploration program was based on the proposed construction, anticipated subsurface conditions and those encountered during exploration, and the scope of work outlined in our proposal.

The test borings were drilled on May 15, 2020 using a track-mounted, hollow-stem auger drill. Samples were taken at approximate 2.5- to 5-foot intervals with a standard penetration sampler. This split-spoon sampler, which has a 2-inch outside diameter, is driven into the soil with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler a given distance is an indication of the soil density or consistency. A geotechnical engineer from our staff observed the drilling process, logged the test borings, and obtained representative samples of the soil encountered. The Test Boring Logs are attached as Plates 3 through 8. The log of the 2005 test boring is also attached with this report.

# **Soil Conditions**

With the exception of a few feet of fill soil revealed in one of the southernmost test borings, native soil was revealed in the test borings. In the southernmost two test boring, loose fill and native soils were revealed at the ground surface. Medium-dense/dense to very dense, native soils were revealed below the upper loose soil in the southernmost test pits and essentially at the ground surface in the other five test borings. Dense/ very dense soil was revealed at the ground surface in the northeastern portion of the development area; this is an obvious sign that the eastern side of the development area was excavated/graded in the past. The native soils were predominantly silty sand with varying amounts of gravel, although lenses/layers of sand were also revealed.

# **Groundwater Conditions**

Groundwater seepage was encountered in two of the seven test borings at a depth of about 18 to 20 feet. The test pits borings were left open for only a short time period. Therefore, the seepage levels on the logs represent the location of transient water seepage and may not indicate the static groundwater level. Groundwater levels encountered during drilling can be deceptive, because seepage into the boring can be blocked or slowed by the auger itself.

It should be noted that groundwater levels vary seasonally with rainfall and other factors, generally with more groundwater and higher-elevation groundwater in the winter and spring months. In addition to the levels revealed in the test borings, it is possible that some perched ground could be revealed between the looser near-surface soil and the underlying glacial till during these months.

The stratification lines on the logs represent the approximate boundaries between soil types at the exploration locations. The actual transition between soil types may be gradual, and subsurface conditions can vary between exploration locations. The logs provide specific subsurface information only at the locations tested. Where a transition in soil type occurred between samples in the borings, the depth of the transition was interpreted. The relative densities and moisture descriptions indicated on the test boring logs are interpretive descriptions based on the conditions observed during drilling.

#### **CONCLUSIONS AND RECOMMENDATIONS**

#### **GENERAL**

THIS SECTION CONTAINS A SUMMARY OF OUR STUDY AND FINDINGS FOR THE PURPOSES OF A GENERAL OVERVIEW ONLY. MORE SPECIFIC RECOMMENDATIONS AND CONCLUSIONS ARE

CONTAINED IN THE REMAINDER OF THIS REPORT. ANY PARTY RELYING ON THIS REPORT SHOULD READ THE ENTIRE DOCUMENT.

The test borings conducted in the area of the proposed building encountered medium-dense to dense, competent, native silty sand soils at relatively shallow depths. Based on the proposed project grading, the floor level on the northern portion of the proposed building will be near the existing site grade, while on the southern portion it could be up to about 5 feet higher than the existing grade. A conventional footing foundation can be used to support the new building, provided the foundation bears on the competent soil. The silty sand soil is, however, very moisture sensitive due to its silt content. If may be necessary to protect bearing surfaces during foundation construction with a mat of imported, clean, crushed material if the soil is wet or becomes wet.

The steep slope/rockery that separates the nearly flat southern portion of the site from the upper northern parking lot qualifies as a Steep Slope Hazard Areas per Bellevue code because it is taller than 50 feet. A default minimum buffer of 50 feet from a Steep Slope Hazard Area is 50 feet. For this project, the northern end of the new site building will be about 100 feet from the steep slope; we believe that this distance well exceeds any necessary buffer or setback from the steep slope. Thus, the building location is very suitable for this project from both a code standpoint and a geotechnical engineering standpoint.

There is an approximate 10- to 12-foot-tall, 25-percent-inclined slope on the eastern side of the proposed development. A driveway is proposed there, and thus an excavation into this slope is needed. The soil revealed in a very nearby test boring was very dense soil at the ground surface, which indicates this area was excavated below the native ground surface in the past. It also indicates that the core soil of this slope is very dense. We believe that excavating into this slope in order to construct the new driveway is very suitable from a geotechnical engineering standpoint.

Infiltration is the form of a full infiltration system or just permeable pavement needs to be considered for all project site. On this site, medium-dense/dense or denser, native silty sand soil will allow for only an extremely infiltration (<0.1 inch/hour), and thus is not suitable for any form of infiltration. However, on the southern portion of the site has some looser soil directly at the ground surface. For permeable pavement, an infiltration rate of 0.3 inch/hour is needed. We believe the upper, looser soil at the southern portion of the site can allow for this minimal rate; thus, we believe that permeable pavement could be used in the southern parking lot of the site. However, we believe that catch basins, typical to impermeable parking lots, should be installed in the southern parking lot as an overflow for this parking lot.

A geotechnical consideration for development of this site is the moisture sensitivity of the onsite silty soils if they are to be used as structural fill. Based on our observations. These fine-grained, silty soils are sensitive to moisture, which makes them impossible to adequately compact when they have moisture contents even 2 to 3 percent above their optimum moisture content. The reuse of these soils as structural fill to level the site will only be successful during hot, dry weather. Aeration of each loose lift of soil will be required to dry it before the lift is compacted. Alternatively, the soil could be chemically dried by adding kiln dust or cement, provided this is allowed by responsible building department. Regardless of the method of drying, the earthwork process would be slowed dramatically if the onsite soil is well above optimum. The earthwork contractor must be prepared to rework areas that don't achieve proper compaction due to high moisture content. Utility trench backfill in structural areas, such as pavements, must also be dried before it can be adequately compacted. Improper compaction of backfill in utility trenches and around control structures is a common reason for pavement distress and failures. Imported granular fill will be needed wherever it is not possible to dry the on-site soils sufficiently before compaction.

The erosion control measures needed during the site development will depend heavily on the weather conditions that are encountered. We anticipate that a silt fence will be needed around the downslope sides of any cleared areas. Existing pavements, ground cover, and landscaping should be left in place wherever possible to minimize the amount of exposed soil. Rocked staging areas and construction access roads should be provided to reduce the amount of soil or mud carried off the property by trucks and equipment. Wherever possible, the access roads should follow the alignment of planned pavements. Trucks should not be allowed to drive off of the rock-covered areas. Cut slopes and soil stockpiles should be covered with plastic during wet weather. Following clearing or rough grading, it may be necessary to mulch or hydroseed bare areas that will not be immediately covered with landscaping or an impervious surface. On most construction projects, it is necessary to periodically maintain or modify temporary erosion control measures to address specific site and weather conditions.

The drainage and/or waterproofing recommendations presented in this report are intended only to prevent active seepage from flowing through concrete walls or slabs. Even in the absence of active seepage into and beneath structures, water vapor can migrate through walls, slabs, and floors from the surrounding soil, and can even be transmitted from slabs and foundation walls due to the concrete curing process. Water vapor also results from occupant uses, such as cooking, cleaning, and bathing. Excessive water vapor trapped within structures can result in a variety of undesirable conditions, including, but not limited to, moisture problems with flooring systems, excessively moist air within occupied areas, and the growth of molds, fungi, and other biological organisms that may be harmful to the health of the occupants. The designer or architect must consider the potential vapor sources and likely occupant uses, and provide sufficient ventilation, either passive or mechanical, to prevent a build up of excessive water vapor within the planned structure.

Geotech Consultants, Inc. should be allowed to review the final development plans to verify that the recommendations presented in this report are adequately addressed in the design. Such a plan review would be additional work beyond the current scope of work for this study, and it may include revisions to our recommendations to accommodate site, development, and geotechnical constraints that become more evident during the review process.

We recommend including this report, in its entirety, in the project contract documents. This report should also be provided to any future property owners so they will be aware of our findings and recommendations.

#### SEISMIC CONSIDERATIONS

In accordance with the International Building Code (IBC), the soil class within 100 feet of the ground surface is best represented by Site Class Type C (Very Dense Soil). As noted in the USGS website, the mapped spectral acceleration value for a 0.2 second ( $S_s$ ) and 1.0 second period ( $S_1$ ) equals 1.35 g and 0.47g, respectively.

The IBC and ASCE 7 require that the potential for liquefaction (soil strength loss) during an earthquake be evaluated for the peak ground acceleration of the Maximum Considered Earthquake (MCE), which has a probability of occurring once in 2,475 years (2 percent probability of occurring in a 50-year period). The MCE peak ground acceleration adjusted for site class effects (F<sub>PGA</sub>) equals 0.69g. The soils beneath the site are not susceptible for seismic liquefaction under the ground motions of the MCE because of their dense nature and/or the absence of near-surface groundwater.

Sections 1803.5 of the IBC and 11.8 of ASCE 7 require that other seismic-related geotechnical design parameters (seismic surcharge for retaining wall design and slope stability) include the potential effects of the Design Earthquake. The peak ground acceleration for the Design Earthquake is defined in Section 11.2 of ASCE 7 as two-thirds (2/3) of the MCE peak ground acceleration, or 0.46g.

### **CONVENTIONAL FOUNDATIONS**

The proposed structure can be supported on conventional continuous and spread footings bearing on undisturbed, competent, medium-dense to dense, native soil or on structural fill placed above this competent native soil. See the section entitled *General Earthwork and Structural Fill* for recommendations regarding the placement and compaction of structural fill beneath structures. compaction of structural fill should be verified with frequent density testing during fill placement. Prior to placing structural fill beneath foundations, the excavation should be observed by the geotechnical engineer to document that adequate bearing soils have been exposed.

We recommend that continuous and individual spread footings have minimum widths of 16 and 24 inches, respectively. Exterior footings should also be bottomed at least 18 inches below the lowest adjacent finish ground surface for protection against frost and erosion. The local building codes should be reviewed to determine if different footing widths or embedment depths are required. Footing subgrades must be cleaned of loose or disturbed soil prior to pouring concrete. Depending upon site and equipment constraints, this may require removing the disturbed soil by hand. Also, as stated earlier, the protection of the soil subgrade with a mat of imported material may be needed of the soil is or becomes wet during foundation construction.

An allowable bearing pressure of 2,000 pounds per square foot (psf) is appropriate for footings supported on competent native soil or structural fill placed on the competent soil. A one-third increase in this design bearing pressure may be used when considering short-term wind or seismic loads. For the above design criteria, it is anticipated that the total post-construction settlement of footings founded on the competent native soil or up to about 5 feet of fill will be about 1-inch, with differential settlements on the order of 1/2-inch in a distance of 50 feet along a continuous footing with a uniform load.

Lateral loads due to wind or seismic forces may be resisted by friction between the foundation and the bearing soil, or by passive earth pressure acting on the vertical, embedded portions of the foundation. For the latter condition, the foundation must be either poured directly against relatively level, undisturbed soil or be surrounded by level, well-compacted fill. We recommend using the following ultimate values for the foundation's resistance to lateral loading:

PARAMETER	ULTIMATE VALUE
Coefficient of Friction	0.50
Passive Earth Pressure	350 pcf

Where: pcf is Pounds per Cubic Foot, and Passive Earth Pressure is computed using the Equivalent Fluid Density.

If the ground in front of a foundation is loose or sloping, the passive earth pressure given above will not be appropriate. The above ultimate values for passive earth pressure and coefficient of friction do not include a safety factor.

Thickened slabs are often used to support interior walls in multifamily and commercial structures. It is important to remember that thickened slab areas are structurally designed as footings that support building loads, just like conventional footings. For this reason, the subgrade below thickened slabs must be prepared in the same way as for conventional footings. All unsuitable soils have to be removed and any structural fill compacted in accordance with the recommendations of this report. Also, the compacted slab fill has to be protected from disturbance by the earthwork, foundation, and utility contractors.

#### FOUNDATION AND RETAINING WALLS

Retaining walls backfilled on only one side should be designed to resist the lateral earth pressures imposed by the soil they retain. The following recommended parameters are for walls that restrain level backfill:

PARAMETER	VALUE
Active Earth Pressure *	35 pcf
Passive Earth Pressure	350 pcf
Coefficient of Friction	0.50
Soil Unit Weight	130 pcf

Where: pcf is Pounds per Cubic Foot, and Active and Passive Earth Pressures are computed using the Equivalent Fluid Pressures.

The design values given above do not include the effects of any hydrostatic pressures behind the walls and assume that no surcharges, such as those caused by slopes, vehicles, or adjacent foundations will be exerted on the walls. If these conditions exist, those pressures should be added to the above lateral soil pressures. Where sloping backfill is desired behind the walls, we will need to be given the wall dimensions and the slope of the backfill in order to provide the appropriate design earth pressures. The surcharge due to traffic loads behind a wall can typically be accounted for by adding a uniform pressure equal to 2 feet multiplied by the above active fluid density. Heavy construction equipment should not be operated behind retaining and foundation walls within a distance equal to the height of a wall, unless the walls are designed for the additional lateral pressures resulting from the equipment.

The values given above are to be used to design only permanent foundation and retaining walls that are to be backfilled, such as conventional walls constructed of reinforced concrete or masonry. It is not appropriate to use the above earth pressures and soil unit weight to back-calculate soil strength parameters for design of other types of retaining walls, such as soldier pile, reinforced earth, modular or soil nail walls. We can assist with design of these types of walls, if desired.

The passive pressure given is appropriate only for a shear key poured directly against undisturbed native soil, or for the depth of level, well-compacted fill placed in front of a retaining or foundation wall. The values for friction and passive resistance are ultimate values and do not include a safety factor. Restrained wall soil parameters should be utilized the wall and reinforcing design for a

<sup>\*</sup> For a restrained wall that cannot deflect at least 0.002 times its height, a uniform lateral pressure equal to 10 psf times the height of the wall should be added to the above active equivalent fluid pressure. This applies only to walls with level backfill.

distance of 1.5 times the wall height from corners or bends in the walls, or from other points of restraint. This is intended to reduce the amount of cracking that can occur where a wall is restrained by a corner.

# Wall Pressures Due to Seismic Forces

The surcharge wall loads that could be imposed by the design earthquake can be modeled by adding a uniform lateral pressure to the above-recommended active pressure. The recommended surcharge pressure is 8**H** pounds per square foot (psf), where **H** is the design retention height of the wall. Using this increased pressure, the safety factor against sliding and overturning can be reduced to 1.2 for the seismic analysis.

# Retaining Wall Backfill and Waterproofing

Backfill placed behind retaining or foundation walls should be coarse, free-draining structural fill containing no organics. This backfill should contain no more than 5 percent silt or clay particles and have no gravel greater than 4 inches in diameter. The percentage of particles passing the No. 4 sieve should be between 25 and 70 percent. The later section entitled **Drainage Considerations** should also be reviewed for recommendations related to subsurface drainage behind foundation and retaining walls.

The purpose of these backfill requirements is to ensure that the design criteria for a retaining wall are not exceeded because of a build-up of hydrostatic pressure behind the wall. Also, subsurface drainage systems are not intended to handle large volumes of water from surface runoff. The top 12 to 18 inches of the backfill should consist of a compacted, relatively impermeable soil or topsoil, or the surface should be paved. The ground surface must also slope away from backfilled walls at one to 2 percent to reduce the potential for surface water to percolate into the backfill.

Water percolating through pervious surfaces (pavers, gravel, permeable pavement, etc.) must also be prevented from flowing toward walls or into the backfill zone. Foundation drainage and waterproofing systems are not intended to handle large volumes of infiltrated water. The compacted subgrade below pervious surfaces and any associated drainage layer should therefore be sloped away. Alternatively, a membrane and subsurface collection system could be provided below a pervious surface.

It is critical that the wall backfill be placed in lifts and be properly compacted, in order for the above-recommended design earth pressures to be appropriate. The recommended wall design criteria assume that the backfill will be well-compacted in lifts no thicker than 12 inches. The compaction of backfill near the walls should be accomplished with hand-operated equipment to prevent the walls from being overloaded by the higher soil forces that occur during compaction. The section entitled *General Earthwork and Structural Fill* contains additional recommendations regarding the placement and compaction of structural fill behind retaining and foundation walls.

The above recommendations are not intended to waterproof below-grade walls, or to prevent the formation of mold, mildew or fungi in interior spaces. Over time, the performance of subsurface drainage systems can degrade, subsurface groundwater flow patterns can change, and utilities can break or develop leaks. Therefore, waterproofing should be provided where future seepage through the walls is not acceptable. This typically includes limiting cold-joints and wall penetrations, and using bentonite panels or membranes on the

outside of the walls. There are a variety of different waterproofing materials and systems, which should be installed by an experienced contractor familiar with the anticipated construction and subsurface conditions. Applying a thin coat of asphalt emulsion to the outside face of a wall is not considered waterproofing, and will only help to reduce moisture generated from water vapor or capillary action from seeping through the concrete. As with any project, adequate ventilation of basement and crawl space areas is important to prevent a buildup of water vapor that is commonly transmitted through concrete walls from the surrounding soil, even when seepage is not present. This is appropriate even when waterproofing is applied to the outside of foundation and retaining walls. We recommend that you contact an experienced envelope consultant if detailed recommendations or specifications related to waterproofing design, or minimizing the potential for infestations of mold and mildew are desired.

The *General*, *Slabs-On-Grade*, and *Drainage Considerations* sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

## **SLABS-ON-GRADE**

The building floors can be constructed as slabs-on-grade atop firm native soil or on structural fill. The subgrade soil must be in a firm, non-yielding condition at the time of slab construction or underslab fill placement. Any soft areas encountered should be excavated and replaced with select, imported structural fill.

Even where the exposed soils appear dry, water vapor will tend to naturally migrate upward through the soil to the new constructed space above it. This can affect moisture-sensitive flooring, cause imperfections or damage to the slab, or simply allow excessive water vapor into the space above the slab. All interior slabs-on-grade should be underlain by a capillary break drainage layer consisting of a minimum 4-inch thickness of clean gravel or crushed rock that has a fines content (percent passing the No. 200 sieve) of less than 3 percent and a sand content (percent passing the No. 4 sieve) of no more than 10 percent. Pea gravel or crushed rock are typically used for this layer.

As noted by the American Concrete Institute (ACI) in the *Guides for Concrete Floor and Slab Structures*, proper moisture protection is desirable immediately below any on-grade slab that will be covered by tile, wood, carpet, impermeable floor coverings, or any moisture-sensitive equipment or products. ACI recommends a minimum 10-mil thickness vapor retarder for better durability and long term performance than is provided by 6-mil plastic sheeting that has historically been used. A vapor retarder is defined as a material with a permeance of less than 0.3 perms, as determined by ASTM E 96. It is possible that concrete admixtures may meet this specification, although the manufacturers of the admixtures should be consulted. Where vapor retarders are used under slabs, their edges should overlap by at least 6 inches and be sealed with adhesive tape. The sheeting should extend to the foundation walls for maximum vapor protection.

If no potential for vapor passage through the slab is desired, a vapor *barrier* should be used. A vapor barrier, as defined by ACI, is a product with a water transmission rate of 0.01 perms when tested in accordance with ASTM E 96. Reinforced membranes having sealed overlaps can meet this requirement.

We recommend that the contractor, the project materials engineer, and the owner discuss these issues and review recent ACI literature and ASTM E-1643 for installation guidelines and guidance on the use of the protection/blotter material.

The **General**, **Permanent Foundation and Retaining Walls**, and **Drainage Considerations** sections should be reviewed for additional recommendations related to the control of groundwater and excess water vapor for the anticipated construction.

#### **EXCAVATIONS AND SLOPES**

Temporary excavation slopes should not exceed the limits specified in local, state, and national government safety regulations. Also, temporary cuts should be planned to provide a minimum 2 to 3 feet of space for construction of foundations, walls, and drainage. Temporary cuts to a maximum overall depth of about 4 feet may be attempted vertically in unsaturated soil, if there are no indications of slope instability. However, vertical cuts should not be made near property boundaries, or existing utilities and structures. Based upon Washington Administrative Code (WAC) 296, Part N, the upper, more loose to medium-dense soil at the subject site would generally be classified as Type B, but the dense to very dense soil would be Type A. Therefore, temporary cut slopes greater than 4 feet in height should not be excavated at an inclination steeper than 1:1 or 0.75:1 (Horizontal:Vertical), respectively, extending continuously between the top and the bottom of a cut.

The above-recommended temporary slope inclinations are based on the conditions exposed in our explorations, and on what has been successful at other sites with similar soil conditions. It is possible that variations in soil and groundwater conditions will require modifications to the inclination at which temporary slopes can stand. Temporary cuts are those that will remain unsupported for a relatively short duration to allow for the construction of foundations, retaining walls, or utilities. Temporary cut slopes should be protected with plastic sheeting during wet weather. It is also important that surface runoff be directed away from the top of temporary slope cuts. Cut slopes should also be backfilled or retained as soon as possible to reduce the potential for instability. Please note that loose soils can cave suddenly and without warning. Excavation, foundation, and utility contractors should be made especially aware of this potential danger. These recommendations may need to be modified if the area near the potential cuts has been disturbed in the past by utility installation, or if settlement-sensitive utilities are located nearby.

All permanent cuts into native soil should be inclined no steeper than 2:1 (H:V). Compacted fill slopes should not be constructed with an inclination greater than 2.5:1 (H:V). To reduce the potential for shallow sloughing, fill must be compacted to the face of these slopes. This can be accomplished by overbuilding the compacted fill and then trimming it back to its final inclination. Adequate compaction of the slope face is important for long-term stability and is necessary to prevent excessive settlement of patios, slabs, foundations, or other improvements that may be placed near the edge of the slope.

Water should not be allowed to flow uncontrolled over the top of any temporary or permanent slope. All permanently exposed slopes should be seeded with an appropriate species of vegetation to reduce erosion and improve the stability of the surficial layer of soil.

#### **DRAINAGE CONSIDERATIONS**

Footing drains are only needed for this project where: (1) crawl spaces or basements will be below a structure; (2) a slab is below the outside grade; or, (3) the outside grade does not slope downward from a building. Drains should also be placed at the base of all earth-retaining walls. These drains should be surrounded by at least 6 inches of 1-inch-minus, washed rock that is encircled with non-woven, geotextile filter fabric (Mirafi 140N, Supac 4NP, or similar material). At its highest point, a perforated pipe invert should be at least 6 inches below the bottom of a slab floor or the level of a crawl space. The discharge pipe for subsurface drains should be sloped for flow to the outlet point. Roof and surface water drains must not discharge into the foundation drain system. For the best long-term performance, perforated PVC pipe is recommended for all subsurface drains. Clean-outs should be provided for potential future flushing or cleaning of footing drains.

As a minimum, a vapor retarder, as defined in the *Slabs-On-Grade* section, should be provided in any crawl space area to limit the transmission of water vapor from the underlying soils. Crawl space grades are sometimes left near the elevation of the bottom of the footings. As a result, an outlet drain is recommended for all crawl spaces to prevent an accumulation of any water that may bypass the footing drains. Providing a few inches of free draining gravel underneath the vapor retarder is also prudent to limit the potential for seepage to build up on top of the vapor retarder.

No shallow groundwater was observed during our field work. If seepage is encountered in an excavation, it should be drained from the site by directing it through drainage ditches, perforated pipe, or French drains, or by pumping it from sumps interconnected by shallow connector trenches at the bottom of the excavation.

The excavation and site should be graded so that surface water is directed off the site and away from the tops of slopes. Water should not be allowed to stand in any area where foundations, slabs, or pavements are to be constructed. Final site grading in areas adjacent to the building should slope away at least one to 2 percent, except where the area is paved. Surface drains should be provided where necessary to prevent ponding of water behind foundation or retaining walls. A discussion of grading and drainage related to pervious surfaces near walls and structures is contained in the *Foundation and Retaining Walls* section.

#### PAVEMENT AREAS

The pavement section may be supported on firm native soil on structural fill compacted to a 95 percent density. The pavement subgrade must be in a stable, non-yielding condition at the time of paving. Granular structural fill or geotextile fabric may be needed to stabilize soft, wet, or unstable areas. To evaluate pavement subgrade strength, we recommend that a proof roll be completed with a loaded dump truck immediately before paving. In most instances where unstable subgrade conditions are encountered, an additional 12 inches of granular structural fill will stabilize the subgrade, except for very soft areas where additional fill could be required. The subgrade should be evaluated by Geotech Consultants, Inc., after the site is stripped and cut to grade. Recommendations for the compaction of structural fill beneath pavements are given in the section entitled *General Earthwork and Structural Fill*. The performance of site pavements is directly related to the strength and stability of the underlying subgrade.

The pavement for lightly loaded traffic and parking areas should consist of 2 inches of asphalt concrete (AC) over 4 inches of crushed rock base (CRB) or 3 inches of asphalt-treated base (ATB). We recommend providing heavily loaded areas with 3 inches of AC over 6 inches of CRB or 4

inches of ATB. Heavily loaded areas are typically main driveways, dumpster sites, or areas with truck traffic. Increased maintenance and more frequent repairs should be expected if thinner pavement sections are used.

Water from planter areas and other sources should not be allowed to infiltrate into the pavement subgrade. The pavement section recommendations and guidelines presented in this report are based on our experience in the area and on what has been successful in similar situations. As with any pavements, some maintenance and repair of limited areas can be expected as the pavement ages. Cracks in the pavement should be sealed as soon as possible after they become evident, in order to reduce the potential for degradation of the subgrade from infiltration of surface water. For the same reason, it is also prudent to seal the surface of the pavement after it has been in use for several years. To provide for a design without the need for any maintenance or repair would be uneconomical.

#### GENERAL EARTHWORK AND STRUCTURAL FILL

All building and pavement areas should be stripped of surface vegetation, topsoil, organic soil, and other deleterious material. The stripped or removed materials should not be mixed with any materials to be used as structural fill, but they could be used in non-structural areas, such as landscape beds.

Structural fill is defined as any fill, including utility backfill, placed under, or close to, a building, or in other areas where the underlying soil needs to support loads. All structural fill should be placed in horizontal lifts with a moisture content at, or near, the optimum moisture content. The optimum moisture content is that moisture content that results in the greatest compacted dry density. The moisture content of fill is very important and must be closely controlled during the filling and compaction process.

The allowable thickness of the fill lift will depend on the material type selected, the compaction equipment used, and the number of passes made to compact the lift. The loose lift thickness should not exceed 12 inches, but should be thinner if small, hand-operated compactors are used. We recommend testing structural fill as it is placed. If the fill is not sufficiently compacted, it should be recompacted before another lift is placed. This eliminates the need to remove the fill to achieve the required compaction. The following table presents recommended levels of relative compaction for compacted fill:

LOCATION OF FILL PLACEMENT	MINIMUM RELATIVE COMPACTION
Beneath footings or slabs	95%
Filled slopes and behind retaining walls	90%
Beneath pavements and walkways	95% for upper 12 inches of subgrade; 90% below that level

Where: Minimum Relative Compaction is the ratio, expressed in percentages, of the compacted dry density to the maximum dry density, as determined in accordance with ASTM Test Designation D 1557-91 (Modified Proctor).

The **General** section should be reviewed for considerations related to the reuse of on-site soils. Structural fill that will be placed in wet weather should consist of a coarse, granular soil with a silt or clay content of no more than 5 percent. The percentage of particles passing the No. 200 sieve should be measured from that portion of soil passing the three-quarter-inch sieve.

## **LIMITATIONS**

The conclusions and recommendations contained in this report are based on site conditions as they existed at the time of our exploration and assume that the soil and groundwater conditions encountered in the test borings are representative of subsurface conditions on the site. If the subsurface conditions encountered during construction are significantly different from those observed in our explorations, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary. Unanticipated conditions are commonly encountered on construction sites and cannot be fully anticipated by the test borings. Subsurface conditions can also vary between exploration locations. Such unexpected conditions frequently require making additional expenditures to attain a properly constructed project. It is recommended that the owner consider providing a contingency fund to accommodate such potential extra costs and risks. This is a standard recommendation for all projects.

This report has been prepared for the exclusive use of Michael's Subaru of Bellevue, and their representatives, for specific application to this project and site. Our conclusions and recommendations are professional opinions derived in accordance with our understanding of current local standards of practice, and within the scope of our services. No warranty is expressed or implied. The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Our services also do not include assessing or minimizing the potential for biological hazards, such as mold, bacteria, mildew and fungi in either the existing or proposed site development.

## **ADDITIONAL SERVICES**

In addition to reviewing the final plans, Geotech Consultants, Inc. should be retained to provide geotechnical consultation, testing, and observation services during construction. This is to confirm that subsurface conditions are consistent with those indicated by our exploration, to evaluate whether earthwork and foundation construction activities comply with the general intent of the recommendations presented in this report, and to provide suggestions for design changes in the event subsurface conditions differ from those anticipated prior to the start of construction. However, our work would not include the supervision or direction of the actual work of the contractor and its employees or agents. Also, job and site safety, and dimensional measurements, will be the responsibility of the contractor.

During the construction phase, we will provide geotechnical observation and testing services when requested by you or your representatives. Please be aware that we can only document site work we actually observe. It is still the responsibility of your contractor or on-site construction team to verify that our recommendations are being followed, whether we are present at the site or not.

The following plates are attached to complete this report:

Plate 1 Vicinity Map

Plate 2 Site Exploration Plan

Plates 3 - 8 Test Boring Logs

Attachment 2005 Test Boring Log

We appreciate the opportunity to be of service on this project. Please contact us if you have any questions, or if we can be of further assistance.

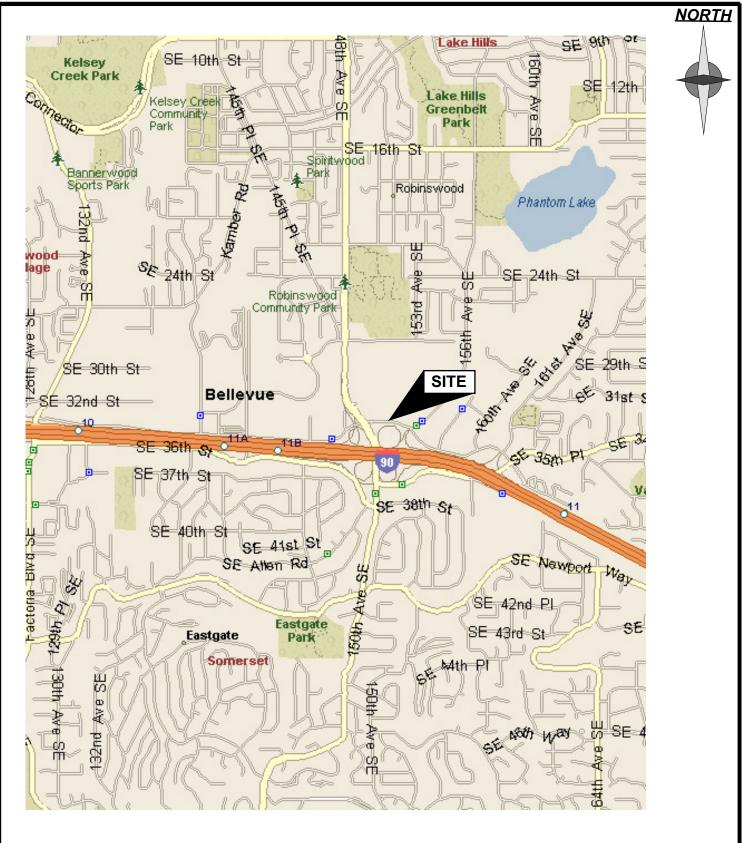
Respectfully submitted,

GEOTECH CONSULTANTS, INC.



D. Robert Ward, P.E. Principal

DRW:kg



(Source: Microsoft MapPoint, 2013)

# GEOTECH CONSULTANTS, INC.

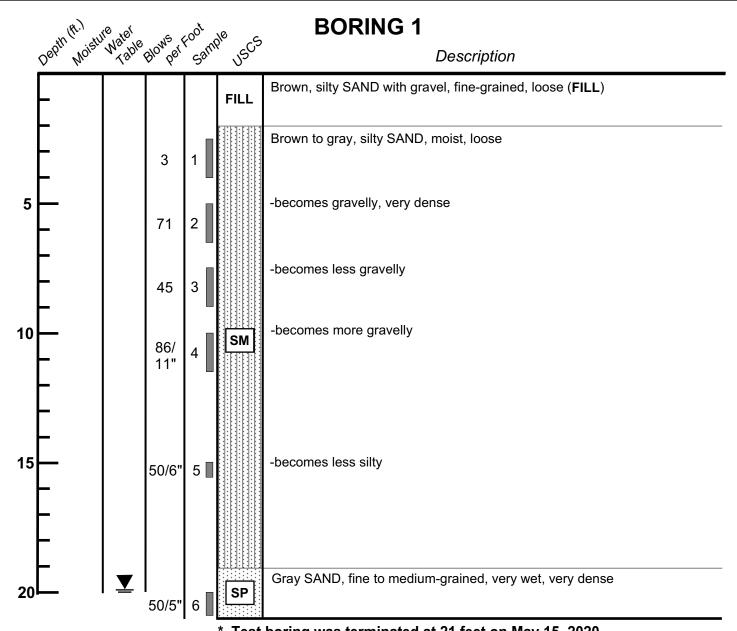
#### VICINITY MAP

Job No:	Date:	Plate:	
20102	May 2020		1





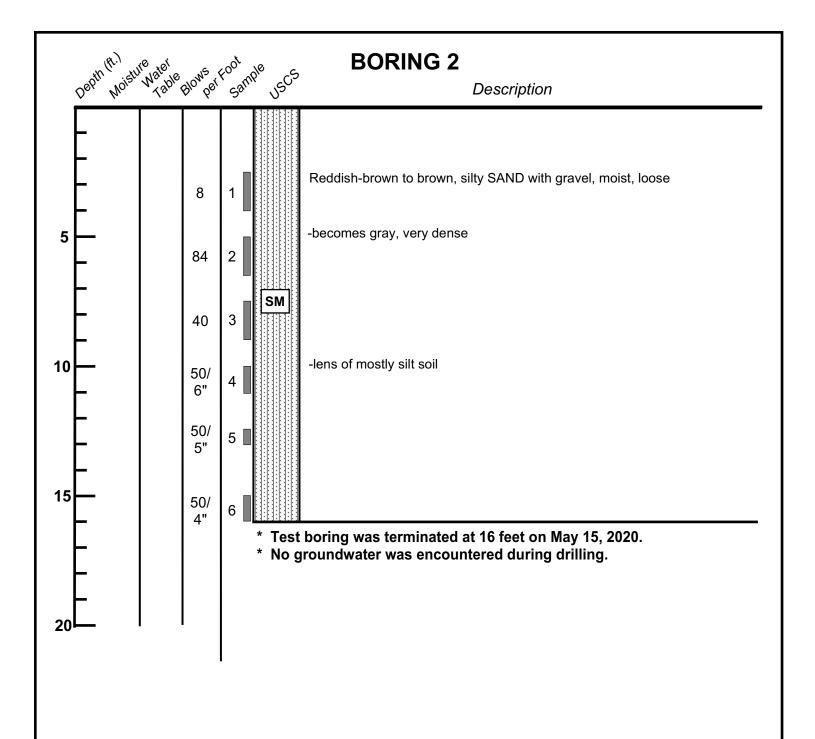
Job No:	Date:		Plate:	
20102	May 2020	No Scale		2



- Test boring was terminated at 21 feet on May 15, 2020
- \* Groundwaterwas encountered at 20 feet during drilling.

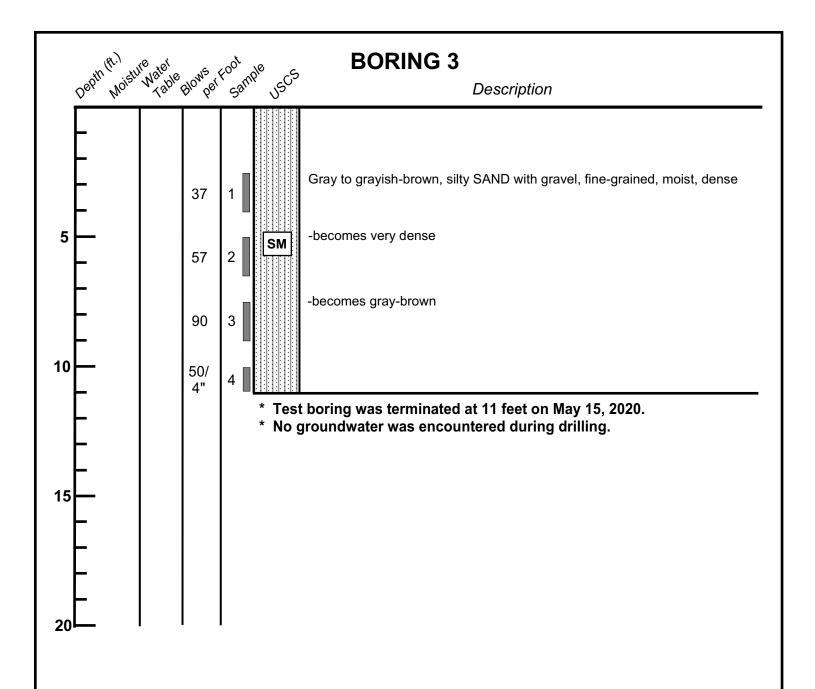


Job No:         Date:         Logged by:         Plate:           20102         May. 2020         DPL         3
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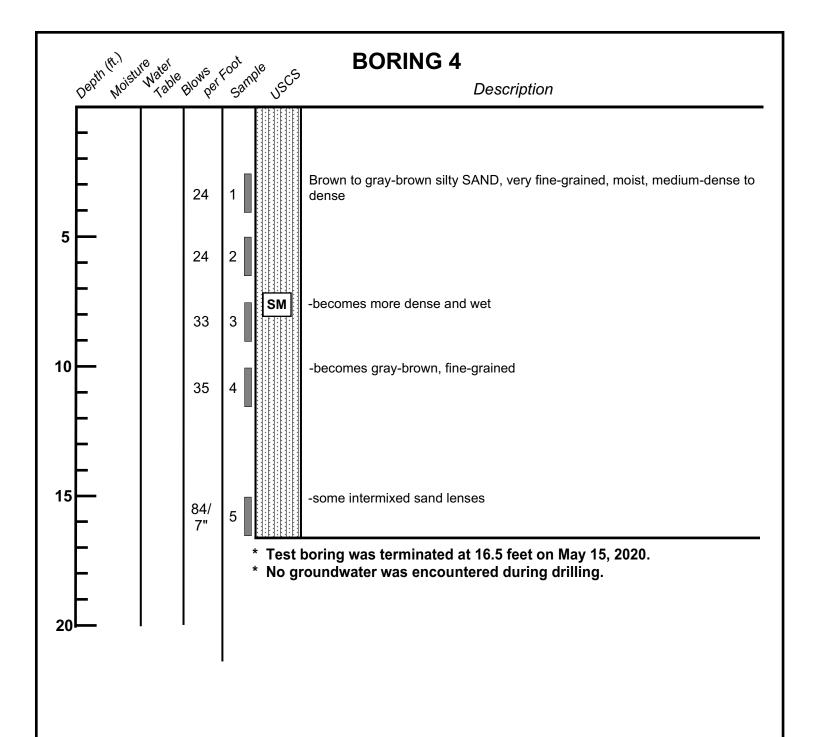


Job No:   Date:   Logged by:   Plate:   4
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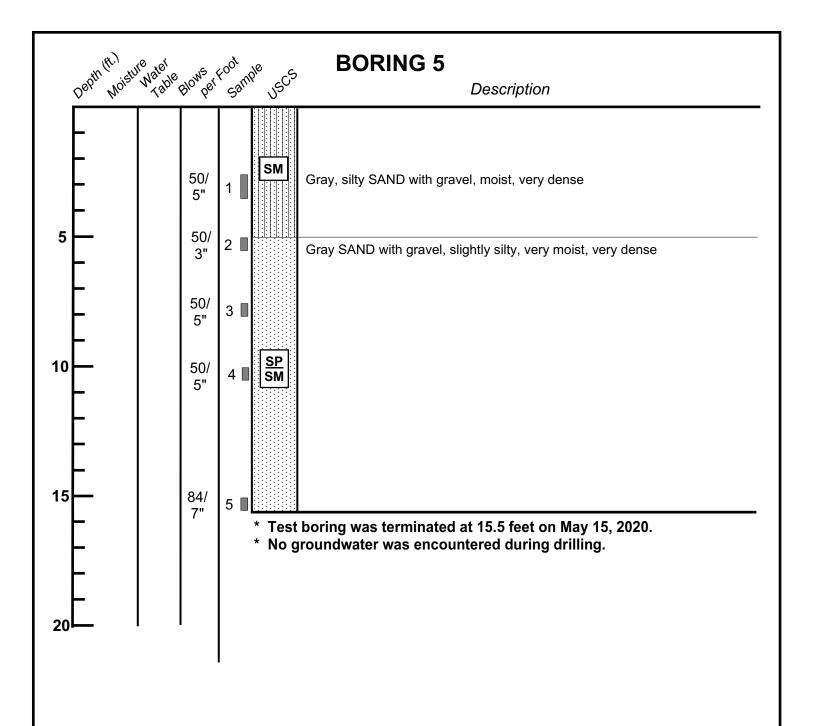


Job No:   Date:   Logged by:   Plate:   5
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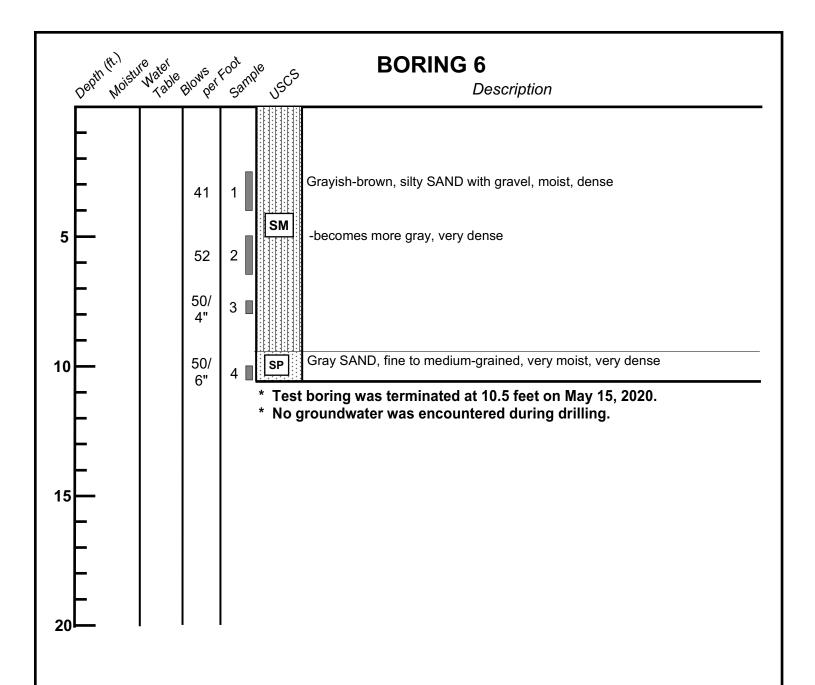


Job No:         Date:         Logged by:         Plate:           20102         May. 2020         DPL         6
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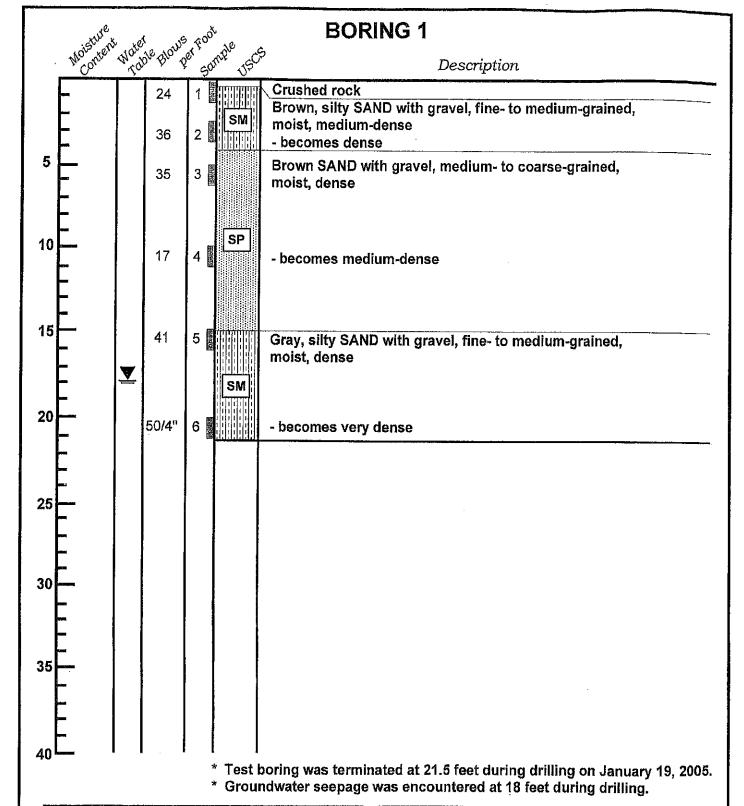


Job   Date:   Logged by:   Plate:   7
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Job         Date:         Logged by:         Plate:           20102         May. 2020         DPL         8
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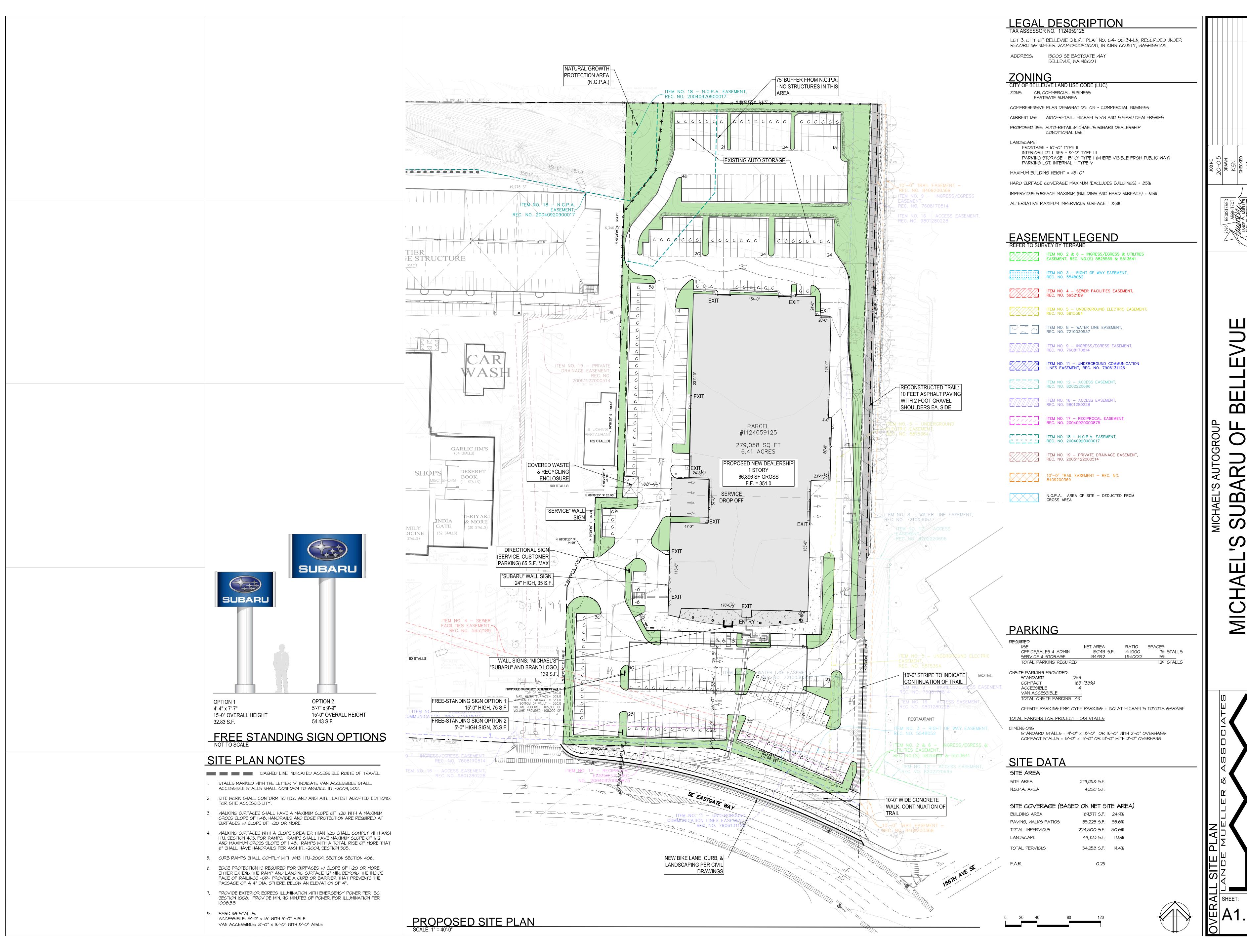
#### **BORING LOG**

Chaplin's Subaru Bellevue, Washington

Job	Date:	Logged by:	Plate:
05014	Jan. 2005	ZJM	3







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